

I CLAIM:

1. A LAN cabling testing system, comprising:

first and second patch cords each terminating at first and second plugs;

a hand-held display unit and a hand-held remote unit, each one of said units

5 including means for sending and receiving a wave form of selected frequency to and from the other of said units through said patch cords and a LAN link to be tested;

the hand-held display unit including a jack for receiving a plug of one of the patch

cords, said jack and plug defining a first mated connector pair;

the hand-held remote unit including a jack for receiving a plug of the other of the

10 patch cords, said jack and plug defining a second mated connector pair;

phase measuring means for measuring phase in one of the display or remote units

and for setting a reference plane at one end of the patch cord;

means for measuring the input impedance looking into the patch cord at said

reference plane;

15 means for measuring the separation  $\Delta f$  between maxima of a plot of the input impedance versus frequency; and

means for calculating the patch cord length according to the relation  $L_{cord} = ( NVP$

$* c ) / ( \Delta f * 2 )$  meters.

20 2. In a LAN cabling testing system of the type having a display unit and a remote unit and first and second patch cords of unknown lengths L1 and L2, the patch cords each terminating

at first and second plugs, and the display and remote units each having a jack for receiving a patch cord plug, a plug and jack when connected comprising a mated connector pair, the display and remote units each having means for sending and receiving a wave form of selected frequency to and from the other unit through said patch cords and a LAN link to be tested, a method of measuring the length of a patch cord comprising the steps of:

5 connecting the patch cord to the display unit and to the remote unit;

determining the nominal velocity of propagation, NVP, of the patch cord;

10 at one of the display and remote units, sequentially placing one of a short-circuit or an open-circuit termination across each of the wire pairs of the patch cord;

sweeping wave forms across the patch cord in a range of frequencies;

measuring the input impedance looking into the patch cord at a reference plane at one end of the patch cord;

15 measuring the separation  $\Delta f$  between maxima of a plot of the input impedance versus frequency; and

calculating the patch cord length according to the relation  $L_{cord} = ( NVP * c ) / ( \Delta f * 2 )$  meters.

3. A method for determining the physical length of a patch cord used with the display unit and remote unit of a LAN field tester, comprising the steps of:

20 connecting the patch cord to the display unit and to the remote unit;

determining the nominal velocity of propagation, NVP, of the patch cord;

at one of the display and remote units, sequentially placing one of a short-circuit or an open-circuit termination across each of the pairs of the patch cord;

sweeping a wave form across the patch cord in a range of frequencies;

measuring the input impedance looking into the patch cord at a reference plane;

5 measuring the separation  $\Delta f$  between maxima of a plot of the input impedance versus frequency; and

calculating the patch cord length according to the relation  $L_{\text{cord}} = (NVP * c) / (\Delta f * 2)$  meters.